What is claimed is:

1.   A method of processing a digital audio signal, comprising the steps of:

providing a digital audio signal having a defined frequency spectrum;

providing and operating a user interface to select a fundamental frequency from the

frequency spectrum;

providing a harmonics generation function to generate a number of signal harmonics

based on the fundamental frequency; and

adding the signal harmonics to the digital audio signal at the fundamental frequency.

2.   The method of claim 1, wherein the step of providing a digital audio signal further

comprises the steps of:

providing an analog audio signal;

providing an analog to digital conversion function; and

converting the analog audio signal into the digital audio signal using the analog to

digital conversion function.

3.   The method of claim 1, wherein the step of providing and operating a user interface

further comprises providing a user input mechanism and a user feedback mechanism.

4.   The method of claim 3, wherein the step of providing and operating a user interface

further comprises providing an auditory user feedback mechanism.

5.   The method of claim 3, wherein the step of providing and operating a user interface

further comprises providing a visual user feedback mechanism.

6.   The method of claim 3, wherein the step of providing and operating a user interface

further comprises providing both visual and auditory user feedback mechanisms.

7.   The method of claim 3, wherein the step of providing and operating a user interface

further comprises providing a mechanical user input mechanism.

8.   The method of claim 3, wherein the step of providing and operating a user interface

further comprises providing an electro-mechanical user input mechanism.

9.   The method of claim 3, wherein the step of providing and operating a user interface

further comprises providing an electronic user input mechanism.

10.   The method of claim 3, wherein the step of providing and operating a user interface

further comprises providing a signal modification window.

11.   The method of claim 10, wherein the step of providing and operating a user interface

further comprises providing a user the ability, via the user input mechanism, to move the

signal modification window through the frequency spectrum to a desired fundamental

frequency position.

12.   The method of claim 11, further comprising the step of providing a memory function.

13.   The method of claim 12, further comprising the step of storing, within the memory

function, information on the modification window's relative position.

14.   The method of claim 13, further comprising the step of storing, within the memory

function, information correlating the information on the modification window's relative

position to a particular type of digital audio signal.

15.   The method of claim 12, wherein the step of providing and operating a user interface

further comprises providing a plurality of signal modification windows, and wherein

information on each modification window's relative position is stored within the memory

function.

16.   The method of claim 1, wherein the step of providing a harmonics generation

function further comprises providing a desired harmonics profile.

17.   The method of claim 16, wherein the step of providing a harmonics generation

function further comprises providing an algorithm that generates signal harmonics, according

to the desired harmonics profile, of the digital audio signal at the fundamental frequency.

18.   The method of claim 16, wherein the step of providing a harmonics generation

function further comprises providing a desired harmonics profile, wherein the harmonics

profile comprises harmonics that decrease in relative weight as relative order increases.

19.   The method of claim 18, wherein the step of providing a desired harmonics profile

further comprises providing only even order harmonics.

1   20.   The method of claim 19, wherein the wherein the harmonics profile comprises only

2   second, fourth and sixth harmonics.

1   21.   The method of claim 18, wherein the step of providing a desired harmonics profile

2   further comprises step of providing a user, via the user interface, the ability to selectively

3   alter which harmonics are included in the harmonics profile.

1   22.   The method of claim 18, wherein the step of providing a desired harmonics profile

2   further comprises step of providing a user, via the user interface, the ability to selectively

3   alter the relative weight of each harmonic included in the harmonics profile.

1   23.   A device for processing digital signals comprising:

2   a signal acquisition function adapted to output a digital input signal;

3   a user interface function, communicatively coupled to a user interface, adapted to

4   receive the digital input digital audio signal and to provide a user-selected fundamental

5   frequency;

6   a comparator function, adapted to receive the digital input digital audio signal and the

7   user-selected fundamental frequency, and to output a portion of the digital input signal at the

8   user-selected fundamental frequency;

9   a harmonics generation function, adapted to receive from the comparator function the

10   portion of the digital input signal at the user-selected fundamental frequency, and to generate

11   a number of signal harmonics for the portion of the digital input signal at the user-selected

12   fundamental frequency based on a defined harmonics profile; and

13   a summing function, adapted to receive the signal harmonics from the harmonics

14   generation function and to add the signal harmonics to the digital input signal at the user-

15   selected fundamental frequency.

1   24.   The device of claim 23, wherein each of the functions is implemented in a separate

2   device.

1   25.   The device of claim 23, wherein two or more of the functions are integrated within a

2   single device.

1   26.   The device of claim 23, wherein the signal acquisition function comprises an analog

2   to digital conversion function.

1   27.   The device of claim 23, wherein the user interface function and the user interface are

2   cooperatively adapted to provide a signal modification window, by which an end-user selects

3   a fundamental frequency.

1   28.   The device of claim 27, wherein the user interface comprises a user input mechanism

2   and a user feedback mechanism.

1   29.   The device of claim 28, wherein the user feedback mechanism comprises an auditory

2   user feedback mechanism.

1   30.   The device of claim 28, wherein the user feedback mechanism comprises a visual

2   user feedback mechanism.

1   31.   The device of claim 28, wherein the user feedback mechanism comprises both visual

2   and auditory user feedback mechanisms.

1   32.   The device of claim 28, wherein the user interface further comprises a mechanical

2   user input mechanism.

1   33.   The device of claim 28, wherein the user interface further comprises an electro-

2   mechanical user input mechanism.

1   34.   The device of claim 28, wherein the user interface further comprises an electronic

2   user input mechanism.

1   35.   The device of claim 23, wherein the user interface and harmonics generation

2   functions are further adapted to generate and process, respectively, a user-adapted harmonics

3   profile.

1   36.   A system for providing user-modified processing of a digital audio signal, the system

2   comprising:

3   a digital input audio signal having a defined signal spectrum;

4   a harmonics profile, adapted to specify generation of a second harmonic of weight

5   equal to 75% of the digital input audio signal, a fourth harmonic of weight equal to 50% of

6   the digital input audio signal, and a sixth harmonic of weight equal to 25% of the digital

7   input audio signal;

8   a harmonics generation function, adapted to generate the harmonics specified in the

9   harmonics profile from the digital input audio signal at a user-selected fundamental

10 frequency;

11   a summing function, adapted to add the harmonics generated by the harmonics

12 generation function to the digital input audio signal at the user-selected fundamental

13   frequency to generate a modified output audio signal;

14   a user feedback mechanism adapted to communicate the modified output audio signal

15   to a user; and

16   a user interface, adapted to provide the user the ability to move the user-selected

17   fundamental frequency throughout the signal spectrum of the digital input audio signal.